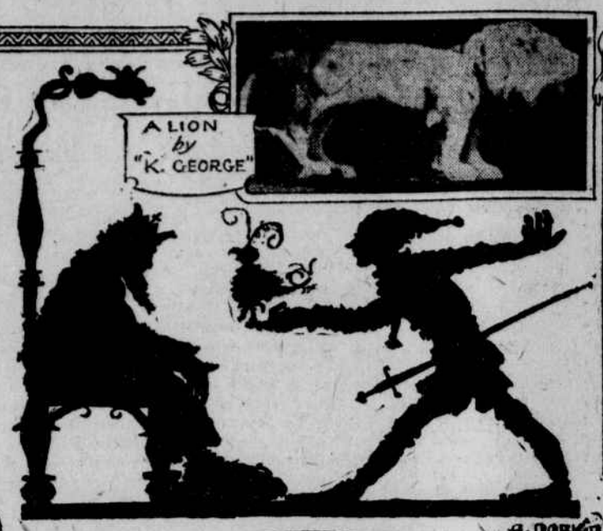
CHILD ARTISTS AND THEIR MASTERPIECES

One Sculptor of 12 Began His Career at 6 and Others Show Great Talent With Brush

TWO TALENTED BOYS AND SOME EXAMPLES OF THEIR WORK

A GORILLA by "K. GEORGE"



A LION by "K. GEORGE"

A. DOBKIN

GEORGE KRATINA "K. GEORGE" the ELEVEN YEAR OLD SCULPTOR.

A SILHOUETTE by ALEXANDER DOBKIN SON of THE RUSSIAN TENOR

SKOJI KIMURA ARTIST AND AUTHOR

By STANLEY WALKER.

JESSIE FERDER is 8 years old and goes to Public School 100, at Coney Island. Several years ago she fell and hurt her back, so that she has to wear a brace to hold her head and neck straight. She is undersized. Her home, at 3046 West First street, Coney Island, is not a pretentious one by any means, and her parents are not wealthy.

Jessie spends most of her time, in school and out, drawing pictures of women. "Pretty ladies," she calls them. Some of them are tall and willowy and have puckered up little mouths. Others are short and dumpy and wear ostrich feathers and carry lorgnettes. Jessie draws them all impartially, but sometimes, because she cannot afford to buy big sheets of drawing paper, she draws part of one of her pretty ladies on one sheet and the rest of the pretty lady on another sheet. It is only by putting the sheets together that the whole woman may be observed.

For example, the other day Jessie ran up to her teacher and handed her the picture of a rather severe but attractive woman from the waist up. The picture was labeled "The upper part of Mrs. Fairfax Jones entering the Apollo Theater." After the teacher had admired the picture Jessie handed her another one labeled "The lower part of Mrs. Fairfax Jones entering the Apollo Theater." But if you ask Jessie for more particulars about Mrs. Fairfax Jones and about the location of the Apollo Theater she cannot tell you. For she has been off Coney Island only a few times in her life, and her conception of theaters, pretty women to whom she gives high sounding names, and all the other characters and objects of a world that is strange to her have been gained from pictures in magazines she has happened to see. These little suggestions—an occasional magazine cover or photograph, a phrase overheard in conversation, some anecdote told by her teacher—have been taken by the eight-year-old Coney Island cripple and placed in the strange, luxurious world that she carries in her imagination.

But Jessie herself is not important. She has a little talent, perhaps not as much as her teacher believes. She has some imagination, but perhaps not enough to take her very far. But no matter what becomes of this little cripple when she becomes older, she has something that is very important; she has the quaint twist that only children and a few grown ups of a whimsical turn possess and she has the enthusiasm to bend over a paper for hours at a time putting down her ideas of what "pretty ladies" should look like. And it is because of this, because she is an example of a few dozen children in New York who may become artists some day that Jessie is important.

Daisy Ashfords of Pen And Brush Have Hard Time

Of the thousands of children who study drawing as a part of their courses in the elementary schools of New York, most are distinguished by a lack of interest in their work and by a notable lack of ability. Those who show genuine enthusiasm perhaps number a few hundreds. And those who combine enthusiasm and possible talent, it is safe to say, are so few that they may be numbered within a few dozens at most.

It is in the few who belong to this last class that art instructors place their hopes. And especially rare it is to find that quality that art instructors always hope for and too seldom find—imagination.

But sometimes they find imagination, and a child with imagination can produce curious bits of work. To those who have gone to any of the annual exhibitions held by the Society of Independent Artists at the Waldorf-Astoria and viewed with mixed emotions the things that may be seen there, the thought must have come that surely here is the ultimate in bizarre conception and outlandish execution. Not so. When it comes to putting over a freak impression in a freak manner the child artist, whose mind is somehow beset by strange half notions and distorted shapes, can beat the grown up artist every time.

Now and then, searching through the pile upon pile of work that comes from the children in the elementary schools, the instructors come upon little things that Daisy Ashford, the child writer, might have done if she had decided to turn her naive self to drawing instead of literature. Some of them show the precocious child, who usually tries to give the impression of a polish and finish that he does not really possess; others—and these, though precious few they are, are the most interesting—are content simply to be children and to draw or paint their own ideas.

The Daisy Ashfords of the pen and brush have a hard time of it in New York. They fare better in Germany, where there are schools designed especially for their purposes, and in Boston the child artists hold exhibitions two or three times a year, at which work of unusual charm is placed on view.

The director of drawing in the public schools of New York is Frank H. Collins, who has an office in the Board of Education annex in East Sixty-seventh street. He has charge of a staff of supervisors who visit the schools, direct the courses in drawing—and hope for the best.

Teachers in the public schools find it difficult to get the children to abandon themselves in their drawing. It is all well enough to set them down and tell them to "just draw," to put down whatever forms and ideas come into their heads. Many children become remarkably proficient in copying, but are unable to produce an original conception or to draw from life. There is a girl in Brooklyn who can copy the drawings of John Held, Jr., so accurately that it is all but impossible to tell the difference. But she is lost when she is told to sit down and draw her idea of a flapper walking up the avenue.

Many an instructor in elementary art would be glad to collect the drawings that the children sometimes make when the teacher's back is turned, or the strange fancies that children sometimes put down when they are at home and feel free to draw as they please. Even if these pictures are unflattering caricatures of the teachers themselves, the teacher who knows regards them as far more valuable than a stiff copy of a picture of a kitchen stove.

MacMonnies Was a Boy Wonder With Clay and Paint

It is doubtful whether, out of the dozens of children in New York who show unusual aptitude for drawing, any will be able at the age of 15 to approach the work which Pamela Bianco has performed. This Pamela Bianco in the art world is what Jackie Coogan is in motion pictures. She is regarded as far and away the most able child artist of the present time. Her exhibition at the Anderson Galleries in the spring of last year was a sensation. And since then, reports agree, her work has continued to have the charm and finish that makes it sought after by art lovers.

And Frederick MacMonnies is another artist at whose career the child artist might aspire. He was a boy sculptor, and a painter as well. Long before he ever gave a thought to "Civic Virtue," or any of his other works, he was modeling animals from the dough in his mother's kitchen. Children for many blocks around visited the MacMonnies home in Brooklyn in those days, not because Mrs. MacMonnies was such a wonderful cook—although that helped—but chiefly because her cakes were shaped like all kinds of animals.

One morning MacMonnies and some of his boy playmates went downtown to see the parade of Barnum's circus. The first thing he did when he got back home was to take some clay and model a certain white elephant that had made a tremendous impression upon him. He was 6 years old at the time. And this clay elephant is so lifelike that it is still treasured in the MacMonnies family. Later the boy began modeling in wax and in chewing gum. He let his nails grow long, Chinese fashion, so he could use them in the absence of better implements. And before he was 14 years old, although he never had taken a lesson in mixing colors, he made an excellent oil painting of his father. Later young MacMonnies entered the studio of Augustus Saint Gaudens and began in a serious way the career which has led him so far.

There is a boy in Brooklyn now, who, his father swears, will some day be another MacMonnies, or even another Rodin. This boy is George, the 12-year-old son of Joseph M. Kratina, a sculptor and artist of 81 Prospect place, Brooklyn. The father, who studied under Rodin and exhibited in New York in 1918, is a Pole. His wife also is an artist. The boy, in order that whatever fame he acquires may be his own, and not be associated in any way with what his father may or may not do, is signing his work with an assumed name—"K. George." When the boy was six years old he did a hand in clay that his father compares to the work of Rodin, and says that Rodin would even have been proud of doing such a piece of work.

"K. George" also has modeled an ape in plasterine which is remarkable for the vigor of its execution. He also has done a smoking Indian and any number of grotesque caricatures that serve to make the observer agree with the father that here, some day, will be a sculptor of renown.

But you may comb through all the boroughs, search out every place where a child genius might reside and run to earth every tale of how a neighbor's boy is a prodigy—you may do all this and you will not find a boy to compare in versatile talent with the little olive skinned Skoji Kimura, who has just turned 13 and lives with his parents at 310 West Ninety-seventh street. And, unlike most of the genuine prodigies, this boy goes to Public School 179 in West 102d street, where he is one of the prize pupils.

Skoji's father also is an artist, and his mother is a Japanese actress. They have been in this country four years. And during that time Skoji has moved in a world that has made a deep impression upon him, so that his work is a curious blend of the Oriental and the Occidental. The memory of what he saw during his first eight years still persists, but it is colored by his surroundings and his companions during the four years he has been in New York.

As great an artist as Charlie Chaplin has told Skoji that he has the promise of great things. Every time Chaplin comes to town Skoji Kimura goes to visit him, and the two sit and talk for hours about what they would like to do.

Although Skoji has been drawing ever since he can remember, it was only two years ago that he struck upon the idea that has brought him fame among the younger intelligentsia in that district just below Columbia University. This great idea, which he alone conceived, is a magazine which he calls *"The Silk Stream."* A few of the boys and girls he played with in the upper Nineties—Poles, Italians, Jews and Russians—have an interest in the magazine, but their contributions are not many, and Skoji frequently rejects them.

Night after night this little Japanese has stayed in his room and worked over this magazine. He has published about a half dozen numbers, but only one copy of each number. He first draws the cover design in colors. These designs always seek to carry out the idea back of the *"Silk Stream"*—that Skoji Kimura, the writer and artist and mystic, is opening to the reader a stream of luxury, romance and wealth and crime that the boy has come to connect with silk.

Then, with the cover design all to his notion, Skoji begins putting the magazine together. With infinite patience he copies his stories to fit the pages, which are of a good quality of paper, and he leaves little blank spaces on each page so that he may illustrate the stories. And the stories! Some of them are stories of New York crime, told in a trenchant but sketchy fashion, and it must be confessed that they are for the most part extremely gruesome. The threat of death hangs over nearly every page. Some are detective stories, others are love stories, and still others are listed by Skoji Kimura as "stories and novels of political intrigue."

The boy signs some of the stories, but in order to make it appear that he is not alone in his enterprise he has a number of reliable noms de plume. A "Sir John Newton," for example, writes quite a few stories.

Skoji does not go half way. After putting out his magazine he gets out his own ads and blurbs. He planned a series of volumes to be entitled "The Masterpieces of Skoji Kimura," and wrote a list of comments from well known critics. One of these faked tributes to Skoji's mythical set of books tells how Dr. Frank Crane sat up all night to finish one of Skoji Kimura's stories entitled "To the Bottom of the Seven Hells." This particular blurb referred to Skoji Kimura as "the Great Oriental-Occidental Romancer."

Outside of his work he is much the same as any other healthy boy of that age. He plays with his dog, finds much to interest him in the other children who live near by and who go to school with him. But turn him loose in his room, and he will produce more fantastic stuff than any of his playmates will know in a lifetime.

Another boy of unusual promise is Alexander Dobkin, who is 15. He is old enough to be out of the class of child prodigies, but he is still doing work that is interesting, and he has some earlier work which makes his claim to the list of child artists even more secure. He is the son of Dimitry Dobkin, a tenor who is with the Metropolitan Opera Company this year. He lives at 79 East Eighteenth street, Flatbush, and goes to Public School 139. He and his father and mother were driven out of Russia two years ago after they had undergone many hardships. The memory of these scenes left a distinct imprint upon the mind of young Alexander. He has one painting which he calls "The Burning of Moscow." It has an unmistakable Russian modernist touch. Its colors are vivid, and there are strong suggestions in the bowed figures of the horses and the men, with the blazing towers in the background through the snowstorm.

Many Others Show Promise And City Aids Them

Alexander Dobkin already has won several prizes in illustration contests conducted by trade publications and house organs. His parents and his teachers concede that he has imagination and a sense of form and color that should take him far.

There are many others who show promise. Among them are Walter Moesmer, 13, of 36 Kenmore place, Brooklyn, who models animals in clay for playthings for himself and his companions; Irma Michaelis of 815 East Thirty-fifth street, Brooklyn, whose color designs for several years have shown so much talent that she intends to go to Cooper Union or some other school of design in the next year or two, and Howard Savage, 14, of 214 West Sixty-ninth street, who draws and also models interesting figures in clay.

And doubtless there are others, perhaps dozens of them, who have been missed in this survey of the child genius of New York. Some of them may become acceptable artists after years of hard study and the most difficult sort of work; others may become notable with little effort because of their great natural endowments, and still others, probably the majority, will go into some totally inartistic business when they grow a little older, and in after years will look back through long forgotten years at the image of the child who had the soul of an artist.

"For there is many a man," says Frank Collins, "who remembers a little regretfully the things he modeled or drew when he was a boy, and which he neglected at some foolish age because they seemed unimportant.

"The man usually remembers these things when he sees the naive, unsophisticated and altogether whimsical work of the child that has the divine imagination. It is that child that makes happy the tired teachers who see only mediocrity and dullness day after day—it makes them happy even if it means that the discovered prodigy must be taken away where he may develop faster."

A Dean Sees Need of Teamwork By the Parents and the College

By H. E. HAWKES,
Dean of Columbia College.

THE eternal controversy between the younger and the older generations comes to a climax during the college years. To the older generation youth often seems headstrong and without a fine moral sense. To many a self-confident youth the whole process of education is a device on the part of the older generation to prevent the younger generation from competing too soon.

Both sides of the controversy often fail to understand what the elders may expect to hand down to their sons. From the dawn of civilization certain achievements of each generation have been preserved for the next. Generally speaking, material and purely intellectual progress is passed on in the form of wealth or of book. The inventions and discoveries of yesterday are available for our use and extension to-day. We know more we can do more and we have more than our fathers. This is bound to be the case so long as human society exists. Nothing short of a cataclysm like the fall of the ancient empires, the French Revolution and the great war are effective in disturbing this process. And apart from the actual suffering and bloodshed, this disturbance of a natural process is the irreparable injury which such an upheaval causes.

Boys Learn Little From Their Elders

But this is not the point about which the conflict between the older and the younger generation rages. The fathers, and more particularly the mothers, unconsciously expect their sons to start their characters at the point where the parents leave off. Would God this were possible—sometimes! If it were possible we would not today be obliged to look back two thousand years or more to the Greeks and the Hebrews for our models in character any more than we do in regard to material things. But the world is not made that way. Each boy learns much from his own experience but relatively little from his elders. By precept alone not much can be accomplished for youth unless those precepts have barbs that catch and hold in the actual experience of the boy. One day after a long conference with a somewhat harebrained boy, in the course of which I indulged in a number of generalizations that sounded very wise—to me at least—the embarrassed youth brought the interview to a close by thanking me for my interest, concluding with the remark, "You have certainly told me a great many basic truisms." This is almost always the situation. The experience of the older generation, which has been gained by sweat of the brow and travail of the spirit, is little more than basic truisms for our youth.

Not only in the standards of judgment, but in the standards of morality is the older generation unable to impress itself on the younger. We all have a kind of blind faith that our children are no worse than we, but we are often completely unable to justify this faith by observation of the social conventions of our youth. Occasionally some illuminating event shows us the truth, as when the war proved to every one that American young manhood had not relapsed into a low order of moral fiber. And the youth of to-day is as fine as that of six years ago. But they certainly do not take over without change either the manners or the outlook on life of their fathers.

Nothing is gained by lamenting this condition. Neither tears nor imprecations can change it. Far better attempt to discover the limits of this imperviousness in the mind of youth and to work with what we have rather than to deal with a false assumption.

I think that a good deal of the lack of patience that parents show toward their sons is due to the fact that they judge them by standards of middle aged respectability rather than those of hot youth. If parents could recall vividly the storm and stress of their own youth they would understand half of the faults and foolishness of their sons. This calls for a sense of perspective and a sense of humor that some otherwise excellent persons lack.

One of the most touching experiences that comes to a college dean is the opportunity to awaken a young man's sense of loyalty to his father or mother and to make it the point of departure for a process of rapid maturing. I recall a young man of great native ability who seemed to be throwing himself away in careless inattention to anything worth while. He had no interest in his college work, his college friends or his future. The only good trait that I could find was an affection for his father which seemed to be genuine. The boy was about to be dismissed from college and the chance of his making good in the cold world did not look at all good. Finally, as a last resort, I told the boy that I could not see him leave college and bring upon his father the humiliation and distress that was inevitable if he could possibly avoid it. I told him that apparently college did not interest him, and with that decision I would not quarrel. But before leaving he ought to bring his status and record to a point where he could leave with his flags flying. This was due his father. The boy felt the challenge and decided to do one term's work as well as he could purely out of loyalty to his father. This he did faithfully, but in the course of his efforts he became greatly interested in work that he found worth his while when well done, and before the term was over had become engrossed in what he found quite uninteresting in his earlier state of mind. He is now a lawyer, with the brightest prospects of success. He was not mistaken in the kind of father he had. I wish that all fathers afforded the same solid basis for the son's loyalty that this man did.

DR. HERBERT E. HAWKES
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By far the greatest number of parents with whom I come in contact recognize that the aim of the college experience is to enable their sons to improve to the full the opportunity of making the most of the talents that they possess. The most common parental state of mind is one of doubt and bewilderment as to just what goal the boy ought to aim at. I must admit that the college has usually fallen flat in any constructive and intelligent method of solving the problem. To be sure the parents may know the temperament of their son and they may know, within certain limits, a good deal about his character. But any teacher of other people's sons who, for an experiment, tries to teach his own boy knows that the parental relation does not afford knowledge of the boy's intellectual capacity and habits with anything like the accuracy that the teaching relation reveals it. If to the personal estimate of a boy's instructors, provided of course that they are worthy of their positions, the resources of our modern tests of mental capacity be added, the college ought to be in a position to aid the boy and advise the parent far more intelligently than has ever been the case in the past.

At the present time we are not in a position to do more than guess in a rough way whether a boy has the kind of mind that would fit him for the profession of engineer, physician, lawyer or for a business career, although I think any college that does its duty by its students ought to have an opinion worth more than that of the average parent. The time is soon coming, however, when the knowledge of temperament, heritage and resources possessed by the parents, combined with knowledge of the intellectual interests and attainments afforded by the college instructors and supplemented by a scientific study of mental traits and capacity, will enable the college to cooperate with parents in directing their students with almost unerring accuracy. At present careful observers claim that on the average college men do not find their right niche in the world until ten or fifteen years after graduation. Many never find it. The tremendous responsibility that rests upon parents and college to reduce this period of floundering to ineffective endeavor affords one of the great problems of higher education.

One should not forget that parents and college can only point out the path and make it smooth. The boy himself must do the traveling. My confidence in youth is such as to make me certain that the normal American boy has the ambition and the patience to take each step in the long journey if he has confidence that he is on the right road. In my experience the vast majority of parents are eager to do their share with intelligence in this process.

Neither college nor parent is in a position to direct wisely without the information that the other possesses. Only by placing in the hands of the college the knowledge that the parent has acquired can a wise decision be reached in cases of doubt. It is true that in many instances the ambition of the boy and the opinion of both parent and college point in the same direction. These cases are easy to settle. But many are the young men who can reach an intelligent decision regarding a career only after obtaining suggestions from every possible source. Even then they are fortunate if they can avoid years of aimless labor and discouragement.

Foolish Fathers Look on Son As a Personal Appendage

The most common type of foolish parent is the one who looks upon his son as an appendage to himself rather than as another personality. Curiously enough, fathers are more likely than mothers to have the impression that parent and son constitute a rigid body which should be regarded as a unit. The mother more often realizes, with tears perhaps, that she no longer completely understands the boy. But this is a tacit recognition of the fact of his separate existence. Many is the time that I have been obliged to point out to a father that his son is not his limb, which he can direct as he will. And I do not think that I have often been successful in convincing the father of the truth of my position. This assumption of an inflexible connection between parent and son is, however, by far the most common cause of domestic discord between the older and the younger generation that reaches my office. And I am forced to say that the fault in these cases usually rests on the older generation.

In regard to plans for a career, the profitable use of time, and more particularly in love affairs, many a parent is as inflexible as steel. Such rigidity almost never leads to any happy or satisfactory result, and here also in the majority of cases—though in by no means all of them—the boy is more often right than the parent. This may not be the case in love affairs in which the precipitous impulse of youth too often leads toward trouble.

Money matters are also a fruitful

Continued on Page Twelve.

ORVILLE WRIGHT SAYS GLIDER WILL NEVER RIVAL AEROPLANE

BY ORVILLE WRIGHT.

In the United States Air Service Magazine.

THE soaring experiments of the last year in Germany, France and England have excited much interest in this branch of aviation. Several of these flights have been so sensational as to mislead some into thinking that other means than a motor have been discovered for supporting and propelling an airplane from place to place. Because airplanes based on standard type airplanes have not always led in these contests, others have been misled into believing that the data secured from wind tunnel experiments is erroneous and of no value, and that soaring and gliding experiments will supplant the wind tunnel and laboratory experiments in the investigation of aerodynamic phenomena. In my opinion this is not true. The chief factors in soaring flight are the hill, the wind, the plane and the skill of the operator, ranking in importance about in the order named. The plane best adapted to one hill and one wind condition may be ill suited to another hill and another wind condition. There is not now, and probably never will be, a type of soaring plane most suitable for all conditions of wind and hill any more than there is a most suitable type of airplane for all conditions of speed and loading.

Hentzen's flight of three hours six minutes without a motor is remarkable for its duration only. No new principle of flight was utilized. The longer duration of the flight was due in part to improvements in the glider itself, natural results of the progress made in aerodynamics in the last ten years; in part to the skill acquired in handling aircraft during this period; but especially to the more advantageous topography of the ground over which the flight was made.

For several reasons a ridge is better than a conical hill for purposes of soaring. If the wind is too light for support when facing directly into it additional velocity can be obtained by quartering across the wind along the top of the ridge. On a conical hill this is scarcely possible, since lateral motion across the face of the hill will bring the machine into currents of air having less and less rising trend as the machine gets further from the apex of the hill. But another disadvantage of the conical hill is the fact that the current of air is split by the hill, a part of the air flowing around it to the right and a part to the left. This sudden change in direction makes control of the machine difficult, so difficult, in fact, that often the ordinary controlling surfaces on an airplane are entirely inadequate.

These were the difficulties encountered in the soaring experiments at Kitty Hawk, N. C., in 1911. The machine with which the experiments were commenced had elevators and rudders abundantly powerful for all purposes of power flights, yet under the conditions encountered on the conical face of the Big Kill Devil Hill these controls were so powerless as to allow, on one occasion, the machine to be turned completely over on its back. After the effectiveness of the controls had been greatly increased a number of flights were made of more than five minutes duration, the longest of which was nine minutes forty-five seconds. This was the record for soaring flight from 1911 till 1921 when it was beaten in Germany by Herr Harth, who remained in the air twenty-one minutes without a motor, and this year by Herr Hentzen with a flight of three hours and six minutes.

The French held a soaring contest in August of this year in which the longest flight was five minutes eighteen seconds—inconsiderable in comparison with the German record and not even so good as the American record of eleven years ago. But a mere record of time is not a certain criterion of the efficiency of the machine used nor of the skill of the operator when records are made on different hills and under different wind conditions, since the wind and the hill are the two most important factors in soaring.

[Hentzen's record has been broken lately in the *Daily Mail* contest at Lewes, England, by the Frenchman Maneyrol with a record of three hours twenty-one minutes.]

No soaring flight has been made as yet by man, nor, as far as my own observation goes, by bird, in other than rising currents of air. The theory has been advanced that birds sometimes soar in horizontal winds, without any advantage from rising trends, by utilizing the irregularities in the velocity of the wind. Mouillard, the great French pioneer student of soaring flight, in "The Empire of the Air," published in 1881, was the first, I believe, to put forth this theory. He explained the principle as follows:

"The wind gust is the very essence of the uprise; it is the magic wand, which striking the child's hoop, keeps it upright in rolling, drives it along, or raises it up to overleap elevations on its way. Suppose the toy to be placed on a steep inclined descent; gravity will cause it to roll to the bottom. If beyond this an ascending plane follows, the hoop, urged forward by momentum of acquired velocity, will rise to a height equal to that of fall, minus the losses by friction on the soil and by air resistance. . . .

"Let us suppose further, when the hoop is about to ascend, we can displace the ascending plane, in contrary direction to the toy's course, so that the plane shall glide under the hoop, then we would still more assist the ascension."

Mouillard here states clearly the principle, which he imagined to be involved in soaring, but he gives no figures to show how great must be the irregularities in the wind to sustain the bird.

In 1893 Dr. Langley published his well known paper, "The Internal Work of the Wind," in which he supported Mouillard in this theory. He repeated at greater length, though scarcely more clearly, the proposition laid down by Mouillard. Langley furnished some measurements of irregularities found in winds of different velocities, but he made no attempt to calculate the amount of support a bird would be able to secure from them. The rate of acceleration in winds of ten to fifteen miles average velocity, as shown in his charts, was less than 5 per cent. of what would be required to sustain a bird in soaring flight.

In calm air the buzzard is able to glide on a path descending about one foot in each eight feet forward. In other words, its resistance to forward travel is equal to one-eighth of its weight, and its velocity when gliding on a horizontal course will be retarded at a rate equal to g (32 ft. per second divided by 8, or four feet per second). It follows that if the velocity of the wind increased constantly at the rate of four feet per second the buzzard would be able to just sustain itself. But wind gusts are composed of retardations as well as accelerations in velocity. Since approximately only one-half of the time is occupied in acceleration the actual rate of acceleration would have to be much more than four feet per second in order that the average would be equal to that amount.

ORVILLE WRIGHT

Soaring in rising trends of air deflected upward by hills, trees, waves, &c., always occurs on windy days. But it is well known that over level ground, where there are no hills or other obstacles to deflect the air upward, soaring is done on comparatively calm days and not on windy days when the fluctuations in the velocity of the wind are greatest.

I have seen thousand of buzzards in soaring flight over level ground on calm, sunny days, but I have yet to see one case of soaring over this same ground on a windy day with the sky overcast. If the bird depended on getting its support from the "internal work of the wind" it would do its soaring on days when the fluctuations of the wind were greatest instead of on days when they were least. My brother and I calculated many years ago the support to be obtained from gusts of greater intensity than those actually encountered in nature. I believe that any one who takes the trouble to make this calculation will be convinced that the explanation of soaring flight is not to be found in the internal work of the wind.

On the other hand it is well known that soaring can be done in rising currents of air produced not by objects on the ground but by the difference in temperature of the air at the surface and that above. These currents of rising air are most frequent on calm days when the sun is shining. We see them in the whirlwinds which lift leaves and dust into the air. When you see one of these "whirls" stirring up the dust on a country road look into the sky a little to the direction toward which the wind is blowing. You will often find a buzzard circling there. He circles to keep within the area of the "whirl," which increases in diameter with height.

An aviator frequently runs into these rising currents and feels a slight "bump," but as the diameter of the "whirl" is usually not much in excess of a hundred feet his machine is out of it in a second. With the lightly loaded, slow machines of ten to fifteen years ago these "bumps" were more pronounced and the distance the machine was lifted by one of them was much greater than that experienced by the fast machines of to-day.

In 1910, while training some of the early aviators, I had an unusual experience of this kind near Montgomery, Ala.

I had ascended to a height of a little over one-half mile and was descending when at a height of about 1,500 feet I suddenly discovered that I was not able to descend further, although my motor was throttled to the limit and the machine was pointed downward as steeply as I felt it safe to point it. I remained at a height of about 1,500 feet for a period of five minutes without making any appreciable descent. Suddenly the machine again began to descend and was on the ground in less than a minute.

The flight was made in an almost perfect calm. The descent was in a spiral of not more than 500 or 600 feet diameter. This probably accounted for the long time the machine remained in the uptrend of air. No doubt, if I had steered out of the spiral into a straight course I would have been out of the rising trend in a few seconds; but I did not think of this at the time. In fact, I was so astonished that I did not think at the time of any reason for the phenomenon. But it is evident the machine was in a whirlwind of unusual diameter, in which the air was rising as fast as the machine could descend. These whirlwinds and other rising trends of air are not present everywhere and on some days do not exist at all. We therefore cannot hope to get much use of them as a means of travel.

The news reports of the contests abroad have created in the public mind an exaggerated impression of the importance of this kind of flying. My brother and I, as well as Lilienthal, Chanute and others before us, experimented in this way. We found, however, that while it was a most delightful sport, and furnished a safe and cheap means of acquiring skill in operating an airplane, it was too slow and expensive as a means of obtaining scientific data for the design of aircraft. I feel safe in predicting that it will never rival the powered airplane as a means of transportation nor the wind tunnel as a means of obtaining more exact scientific knowledge in aerodynamics.